SERVIS KVM

Multi Platform
USB Emulation

Server Intelligent Switch for Multi Platform
For IA and UNIX servers

FS-1004MU
FS-1008MU

User's Manual

FUJITSU COMPONENT LIMITED

050209

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Voluntary control of electromagnetic interference

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This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
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This Product is designed, developed and manufactured as contemplated for general use, including without limitation, general office use, personal use, household use, and ordinary industrial use, but is not designed, developed and manufactured as contemplated for use accompanying fatal risks or dangers that, unless extremely high safety is secured, could lead directly to death, personal injury, severe physical damage or other loss (hereinafter "High Safety Required Use"), including without limitation, reaction core control in nuclear power facilities, aircraft autopilot flight control, air traffic control, operation control in mass transport control systems, medical instruments for life support systems, missile launching control in weapon systems. You shall not use this Product without securing the sufficient safety required for the High Safety Required Use. If you wish to use this Product for High Safety Required Use, please consult with our sales person representatives in charge before such use.

Table of Contents

1 Introduction

Thank you for your purchase of this KVM Switch (from here on, simply referred to as the "switch device"). This switch device is usable with PC/AT compatible computers and Sun workstations (hereafter referred to as "hosts") under multi-platform configurations. Requiring only a single master set of control devices (monitor, keyboard and mouse), this switch device allows you to operate hosts from a single console setup. Hosts can be selected simply via the select switches, keyboard or using the on screen display (OSD).
Safety instructions are provided to ensure the safe use of the switch device.
Also, be sure to thoroughly read this User's Manual before you start using the switch device to ensure correct use. Be sure to keep this User's Manual in a safe place for future reference.
This user’s manual is written for 4-port and 8-port setups. Unless specifically noted, all explanations assume an 8-port setup.

KVM Switch: Keyboard, Video, Mouse switch

1.1. Conventions

Symbols and terminology that are used in this manual are described below.

CAUTION	This symbol indicates the possibility of physical damage (such as damage to the KVM switch) or physical injury, which may result if the KVM switch is operated incorrectly by ignoring this symbol.

Point	This logo indicates supplemental information, comments or hints.

- Text that is preceded by a sequence of numbers (1, 2, etc.) means that the operations must be performed in the indicated order.

1.2. Packing list

Verify that the following items are included in the package. If any items are missing or damaged immediately contact the place of purchase or our service department.

8-port KVM switch FS1008MU

■ KVM Switch	1 pc.
■ User’s Manual	1 pc.
■ 19 inch rack mount and holder	1 large and 1 small set
■ Assembly screws	1 set

4-port KVM switch FS1004MU

■ KVM Switch	1 pc.
■ User’s Manual	1 pc.
■ AC Adapter	1 pc.

⚠ CAUTION

1.3. Safety Instructions

Read the “Safety Instructions” before use to ensure proper use of this product. Safety Instructions contained in this section are written for the user to avoid any damage to property or injury to self; please read the following carefully.

- During installation and before using the KVM switch, carefully read about environmental conditions in [Specifications] to use the KVM switch correctly.
- Moving the KVM switch from a cold environment to the installation location may cause condensation to occur. Before using the KVM switch allow it to dry out completely and to reach the ambient temperature of the installation location.
- Make sure that the local power supply voltage is within the acceptable range of the KVM switch. Make sure that the rated voltage meets the specifications of this device (Refer to [Specifications] and the model plate on this device).
- Do not connect or remove any cables during thunderstorms.
- In an emergency (such as: damage to the housing, parts or cables; or liquid or a foreign object has fallen into the KVM switch) remove the power cable as soon as possible and contact your place of purchase or an authorized maintenance person.
- Do not disassemble or modify the KVM switch for any purpose, which may cause electric shocks, or fire and so on. Only licensed engineers may repair the KVM switch
- Do not pull up cable with a jerk. Be sure to hold connector when pulling up cable.
- Avoid operating the KVM switch with wet hands..
- Do not plug or unplug connectors with wet hands.
- Do not place unnecessary items, such as cups, on the top of the KVM switch.
- Verify that the power to the host is off before connecting or disconnecting any of the connectors. Also, be sure to discharge any static electricity. Connecting or disconnecting the connectors while carrying a static charge or while the power to the host is on may damage the host or this device. Please note that, damage of this kind is not covered by the warranty.
- Only PC/AT compatible computers and SUN workstations can be hooked up to this device. However, each host must be equipped with the following type of keyboard, mouse and monitor connectors. Other specifications are not supported.

  PC/AT compatible computers:
  - Mini DIN 6P female (1 each for PS/2 keyboard and PS/2 mouse) or USB A-type connector
  - DB15HD female (for monitor)

  SUN workstations:
  - Mini DIN 8 P female (for keyboard) or USB A type connector
  - 13 W3 female or DB 15 HD male (for monitor)

  *Note: a 13 W3 connector will require a monitor cable adapter.

- Connecting the host requires special optional cables (for PS/2, Sun and USB cables). The maximum cable length is 5 meters. Use a 1.8-meter cable for cascaded connections. Please note that cables longer than specified are not covered by the warranty.
- Use of standard equipment is recommended because special keyboards (programmable keys, wireless or that require a special driver) and mice (wireless or that require a special driver) may not be supported / operate.
- The keyboard connector for this switch device is a USB type or a PS/2 type (Mini DIN 6P female), but you can connect an AT type (DIN 5P male) keyboard by using a PS/2 <-> AT adapter.
- The mouse connector for the switch device is a USB type or a PS/2 type (Mini DIN 6P female). A serial type mouse may not be used as the console mouse.
- When using mice that have PS/2 wheels with scroll functions, the scroll function can only be used with PC/AT compatible machines. Meaning that they do not function on Sun machines. Also, the scroll mice

may fail to function properly depending on the software used.

- The PS/2 keyboard and mouse connectors are the same shape. Be sure the colors match to connect them correctly. If they are forced in or connected incorrectly, the switch device may not only function improperly but also may malfunction.
- USB connectors of this switch device are for keyboard or mouse only. Other USB devices does not work at all.
- Set up the console’s keyboard and mouse with each host correctly. If they are not set correctly they will not operate normally.
- Hook up the cables for each port to the same host. If the monitor port, keyboard port, and mouse port numbers are wrong, you will not be able to select the host correctly.
- A DVI (Digital Video Interface) compatible display cannot be connected.
- The display monitor connected to this switch device should support multi-scan mode. And set its resolution correctly. This switch device supports a resolution of 1600 x 1200 with a refresh rate of 75 Hz. Also, the display may be off center after switching depending on the monitor and resolution settings. Adjust the monitor or video card if this happens.
- Degradations in high resolution screen quality, such as ghosts or blurring, may be due to the monitor cable or video card. Also, the screen may not display normally sometimes, depending on the particular combination of display and video card. If this happens, try using a high grade cable or video card and altering the connection environment.

- The monitor cable connector is a DB 15 HD type. You will need a monitor conversion connector (available separately) to attach a Sun monitor that has a different shape connector. Make sure you connect it in the correct orientation and use the fixing screws to hold it in place. It may cause trouble if it is not connected properly.
- The [POWER] LED on the front panel flashes if the AC cord comes unplugged, reminding you to reconnect it.
- Cascaded connections must be setup exclusively with our KVM switches only. You cannot make these connections with switches produced by other manufacturers.
- A maximum of two levels of cascaded connections are allowed (including the master). Attempting to cascade three or more levels will not work.
- When moving the KVM switch to a different location, use a box that protects the product from bumping and shaking.

⚠ **CAUTION**

1.4. Disposal

This device consists of metal, plastic, electronic parts and so on. When it is disposed of, follow exactly the relevant government regulations, instructions and so on.

1.5. Safety Precautions and Limited Warranty Information:

Fujitsu's Products are not designed for use in medical or life support appliances, devices, or systems where malfunction of a Product can reasonably be expected to result in a personal injury. The Product is designed, developed and manufactured as contemplated for general use, including, general office use, personal use, household use, and ordinary industrial use, but is not for use for high risks or dangers that could reasonably be expected to result in personal injury, or other loss including without limitation, nuclear application, aircraft flight control, air traffic control, mass transport control, medical life support system, or missile launch control in weapon system ("High Safety Required Use"). You should not use this Product without securing sufficient safety required for such High Safety Required Use. Purchaser and its customers using or selling Products for use in such applications do so at their own risk and agree to fully indemnify Fujitsu for any damages resulting in such improper use or sale.

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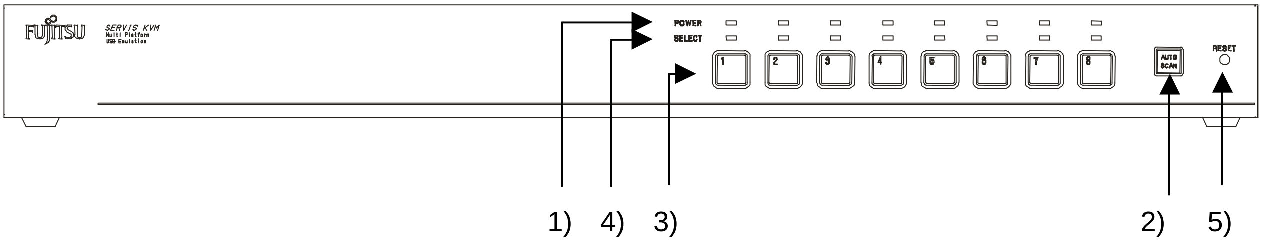
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2. Features

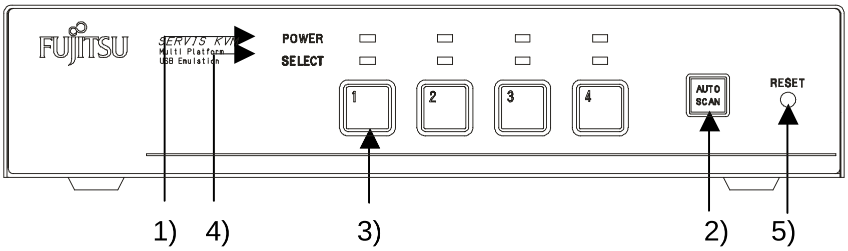
- By connecting several hosts (PC/AT compatible computers or Sun workstations) to this switch device, you can save a lot of space by using only one common master console rather than the situation of a console (monitor, keyboard and mouse) for each host that was previously required. However, you cannot hook up both a PS2 keyboard and mouse and a USB keyboard and mouse at the same time to the console.
- All of the Host ports on this device can use PS/2 interface, USB interface and Sun serial interface. Choose the cables to match the environment you are using.
- With a single switch device, you can attach up to four or eight hosts. (By using four or eight port switch devices.)
- It is possible to attach more hosts by using cascaded connections.
  Example: By using nine “8-port switch devices”, it is possible to hook up 64 hosts.
- The switch device can be stored in a 19 inch EIAJ standard rack cabinet in a space that is just 1U high.
- The console panel and the rear panel can be removed when putting together the rack cabinet making it easier to connect hosts in the small area in the cabinet. (8 port switch devices)
- There is a power and voltage monitoring circuit built in to the device to let you know if the AC cord becomes disconnected or the internal fuse blows.
- Both PS/2 and USB keyboards are supported.
- Both PS/2 and USB mice are supported.
  The following PS/2 mice are supported; 2/3 button mice, each type of wheel mice (Microsoft IntelliMouse, Microsoft IntelliMouse Explorer, Logitech/Logicool MouseMan Wheel and others) .
- A maximum monitor resolution is 1600 x 1200 and a refresh rate 75 Hz.
- Host selection is easy with the Host Selector Button or the OSD display (Hot Key Mode).
- In Hot Key Mode, you can switch hosts using the OSD (on screen display).
- OSD control can be done with Hot Keys from the keyboard. You can set three different types of Hot Key (Ctrl+Alt+Shift, Ctrl x2, and Scroll Lock x2). This allows you to avoid key conflict problems when applications use the same key as Hot Keys for a more effective way to use Hot Keys.
- Auto scan automatically cycles through all of the connected hosts that are currently running, allowing the operating status of each host to be periodically checked. The speed at which auto scan cycles can be controlled by using the keyboard to select one of the six available switching intervals (3 – 60 seconds).
- Auto scan can be done with the Auto Scan Button or the Hot Key Mode.

3. Component Names and Their Functions

3.1 Console Panel



8 Port Console Panel



4 Port Console Panel

1) POWER LED

Lights up when the host is ON. And, flashes when internal power is low by disconnect an AC cord or blow an internal fuse.

2) Auto Scan Button

Press this button when you want to automatically switch between host screens. Pressing it twice stops auto scan. The SELECT LEDs flash (slowly) in order during auto scan. Also, host operations cannot be performed at this time.

3) Host Selector Buttons

Press a button to select its host. You can select hosts even if the POWER LED is not lit.

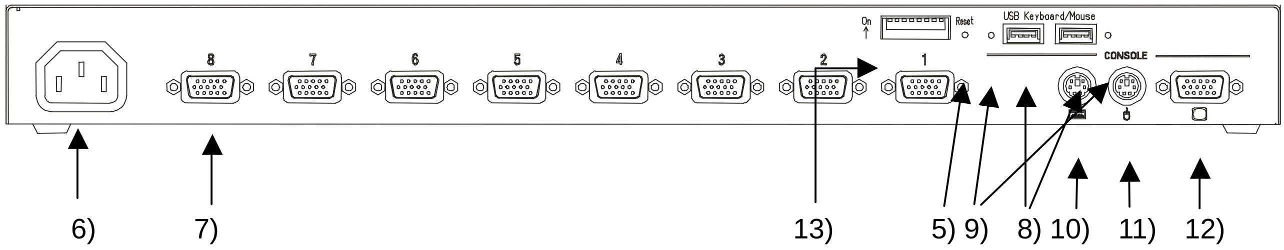
4) Select LED

Lights up when the host is selected. It flashes quickly when in the hot key mode.

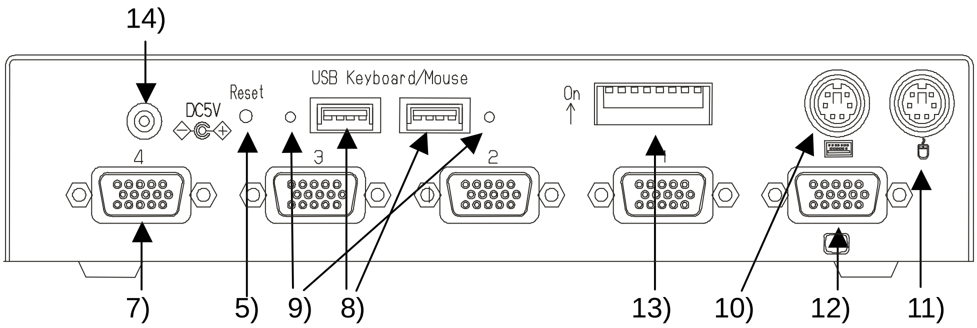
5) Reset Switch

Normally, this switch is not used. Use this switch when selection is not possible or when the keyboard or mouse cannot be operated. Press it lightly with the tip of a metal pin or similar. Pressing this switch returns the switch device to its initial state, and hosts can be restored without being rebooted. If you are using USB or Sun serial interfaces, you can reset the interface by holding the reset switch down for over five seconds.

3.2 Rear Panel



8 Port Rear Panel



4 Port Rear Panel

6) Power cable connector

Connect to a 100 to 240V AC electric outlet.

7) Connectors for hosts [1 through 8]

Connect each port (1 through 8) on this device to the relevant host's keyboard, mouse and monitor connectors with the special cable.

8) USB keyboard / mouse Connector

Connect a USB keyboard / mouse here.
(Cannot be used concurrently with a PS/2 type keyboard and mouse. USB keyboard / mouse have priority over PS/2 keyboard / mouse)

9) USB keyboard / mouse status LEDs

Green: This port can use or using.
Red : Over current was drawn from this port. Not in work.
Unplug the device and push a reset_sw.
unlit : Unsupported device or some error has occurred in this port.
Unplug the device or push a reset_sw.

10) PS/2 Keyboard connector

Connect a PS/2 keyboard here.
(Cannot be used concurrently with a USB type keyboard)

11) PS/2 Mouse connector

Connect a PS/2 mouse here.
(Cannot be used concurrently with a USB type mouse)

12) Monitor Connector

Connect a monitor here.

13) DIP Switches

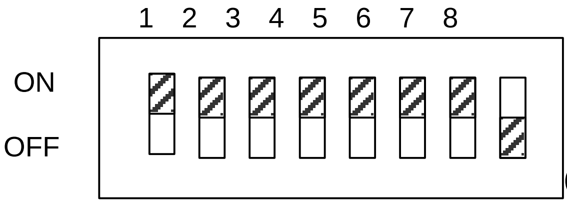
Use for a variety of settings. Numbered from left side while facing the switches starting from 1,2…8; up is on and down is off.

14) AC adapter connector

Connect the AC adapter here. Do not use any AC adapter other than the one provided with the switch device.

3.3 DIP Switch Settings

The factory default settings are as follows:



(*Note: the indicates the switch position)

DIP Switch Functions

SW	Function	ON state / OFF state
1	Hot Key Mode: <Ctrl>+<Alt>+<Shift>	ON: enabled / OFF: disabled
2	Hot Key Mode: Double <Ctrl>	ON: enabled / OFF: disabled
3	Hot Key Mode: Double <Scroll Lock>	ON: enabled / OFF: disabled
4	Country Setting bit 1	(see following table)
5	Country Setting bit 2	(“)
6	Country Setting bit 3	(“)
7	Country Setting bit 4	(“)
8	Power Mode Setting	ON: the switch device is always ON. OFF: the switch device turns ON if any connected host is turned ON.

The country code (language) settings are as follows:

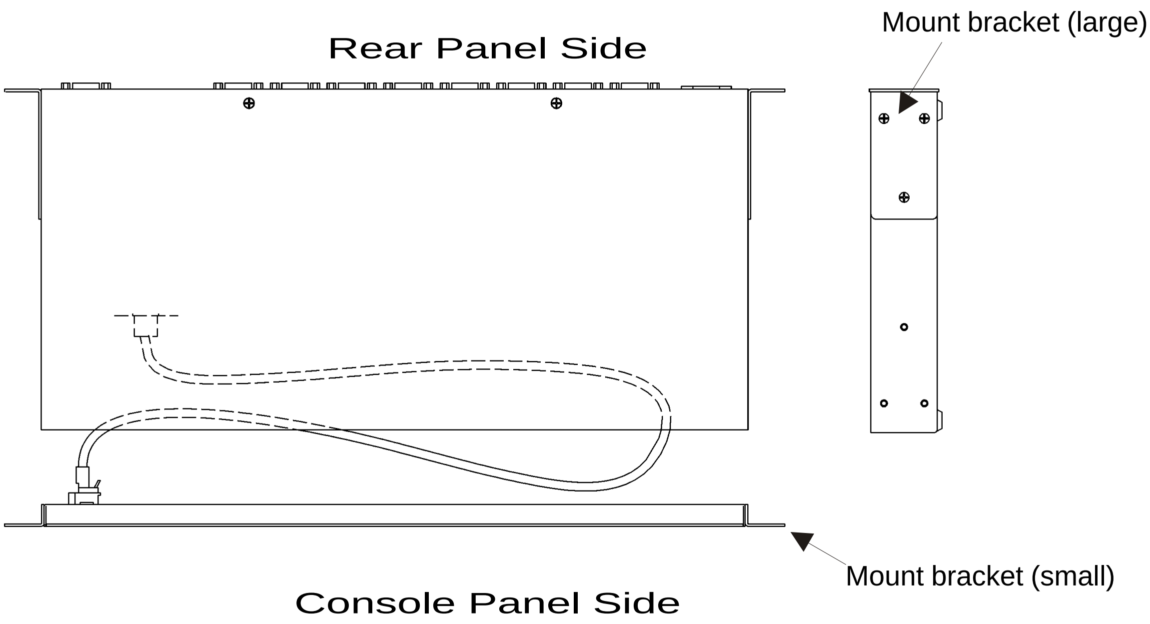
Country Setting	SW4	SW5	SW6	SW7
Japan	ON	ON	ON	ON
US	ON	ON	ON	OFF
UK	ON	ON	OFF	ON
German	ON	ON	OFF	OFF
French	ON	OFF	ON	ON
Spanish	ON	OFF	ON	OFF
Swedish	ON	OFF	OFF	ON

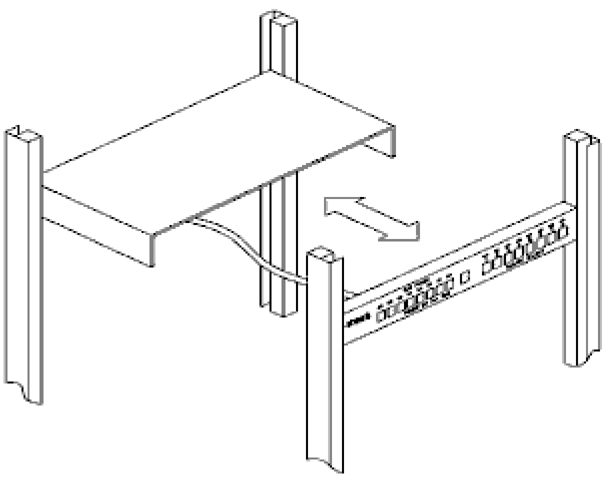
The country code (language) settings are as follows:

Country Setting	SW4	SW5	SW6	SW7
JPN	ON	ON	ON	ON
USA	ON	ON	ON	OFF
GBR	ON	ON	OFF	ON
GER	ON	ON	OFF	OFF
FRA	ON	OFF	ON	ON
ESP	ON	OFF	ON	OFF
SWE	ON	OFF	OFF	ON
POR	ON	OFF	OFF	OFF
TPE	OFF	ON	ON	ON
KOR	OFF	ON	ON	OFF
ITA	OFF	ON	OFF	ON
UNIX	OFF	ON	OFF	OFF
NOR	OFF	OFF	ON	ON
BEL	OFF	OFF	ON	OFF
DEN	OFF	OFF	OFF	ON

4. Installation Procedure (Rack Setup)

1. Remove the four flathead screws from the left and right sides of the switch device's console panel.
2. Remove the console panel from the switch device, and attach the rack mount bracket (small) to it. (Use the attached M3 screws. (4 pcs.))
3. Attach the rack mount bracket (large) to the rear panel side of the switch device. (use the attached M3 screws. (6 pcs.))
4. Detach the console panel connector cable from the console panel before mounting it in the rack. This makes it easy to mount the switch device.
5. Fix the console panel to the front side of the rack with screws.
6. Fix the rear panel to the rear of the rack with the screws.
7. Reattach the console cable (detached in step 4.) to the console panel.





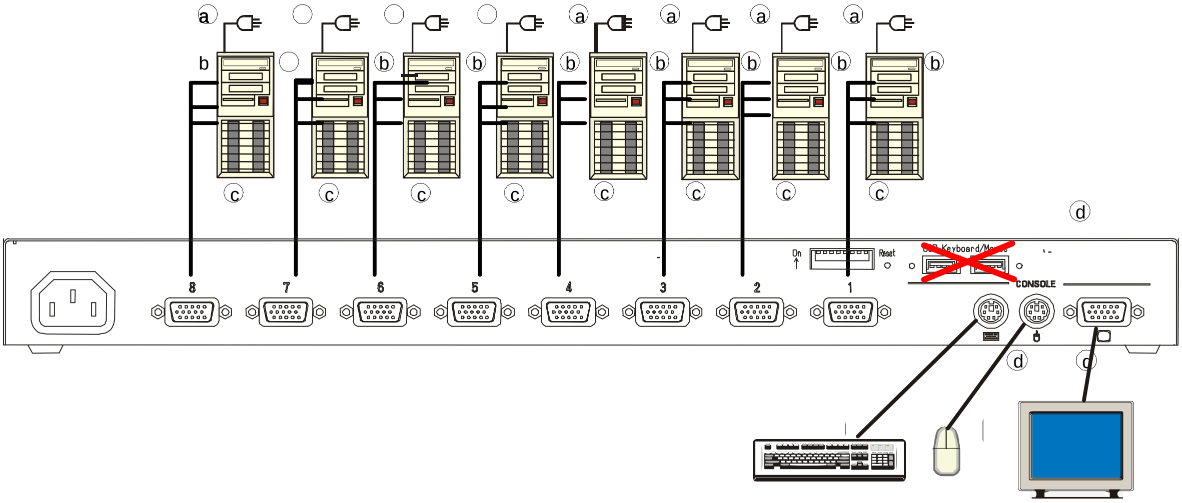
5. Setup

5.1. Getting started

Set the DIP switches to match your chosen environment.
Then confirm that the power cable for each host is plugged into an electric outlet and that the power is off.
(Confirm connection (a))

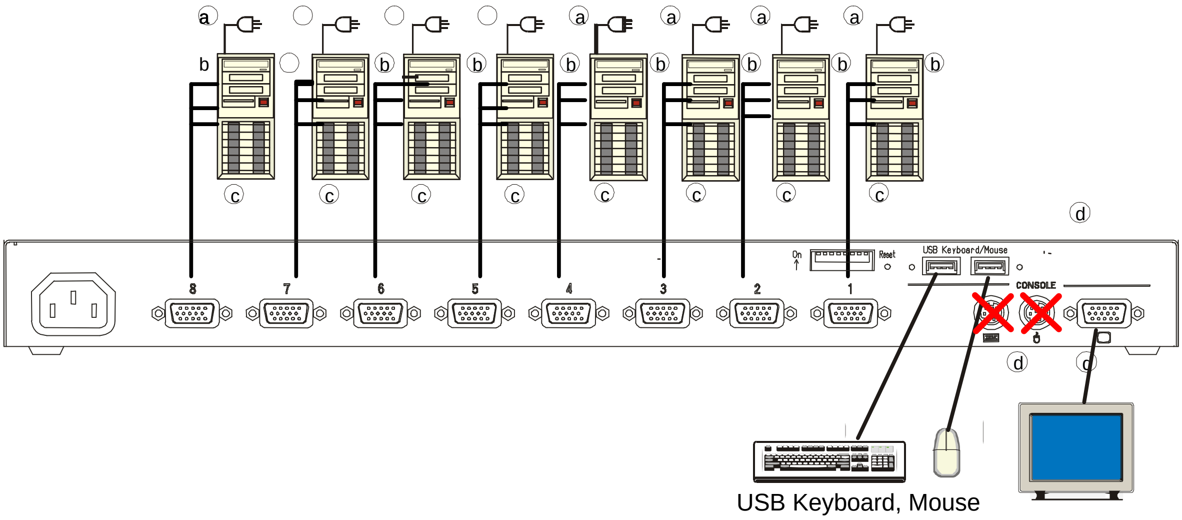
5.2.Connecting the hosts (using single switch device)

1) Connect the first host's keyboard, mouse connector and CRT connector with the special cable (connect (b)), next connect the switch device's host port connector (Mini D-Sub 15 pin female) to the special connector (black). (connect (c)).
2) Connect hosts 2 through 8 in the same manner.



PS/2 Keyboard, Mouse

Monitor



USB Keyboard, Mouse

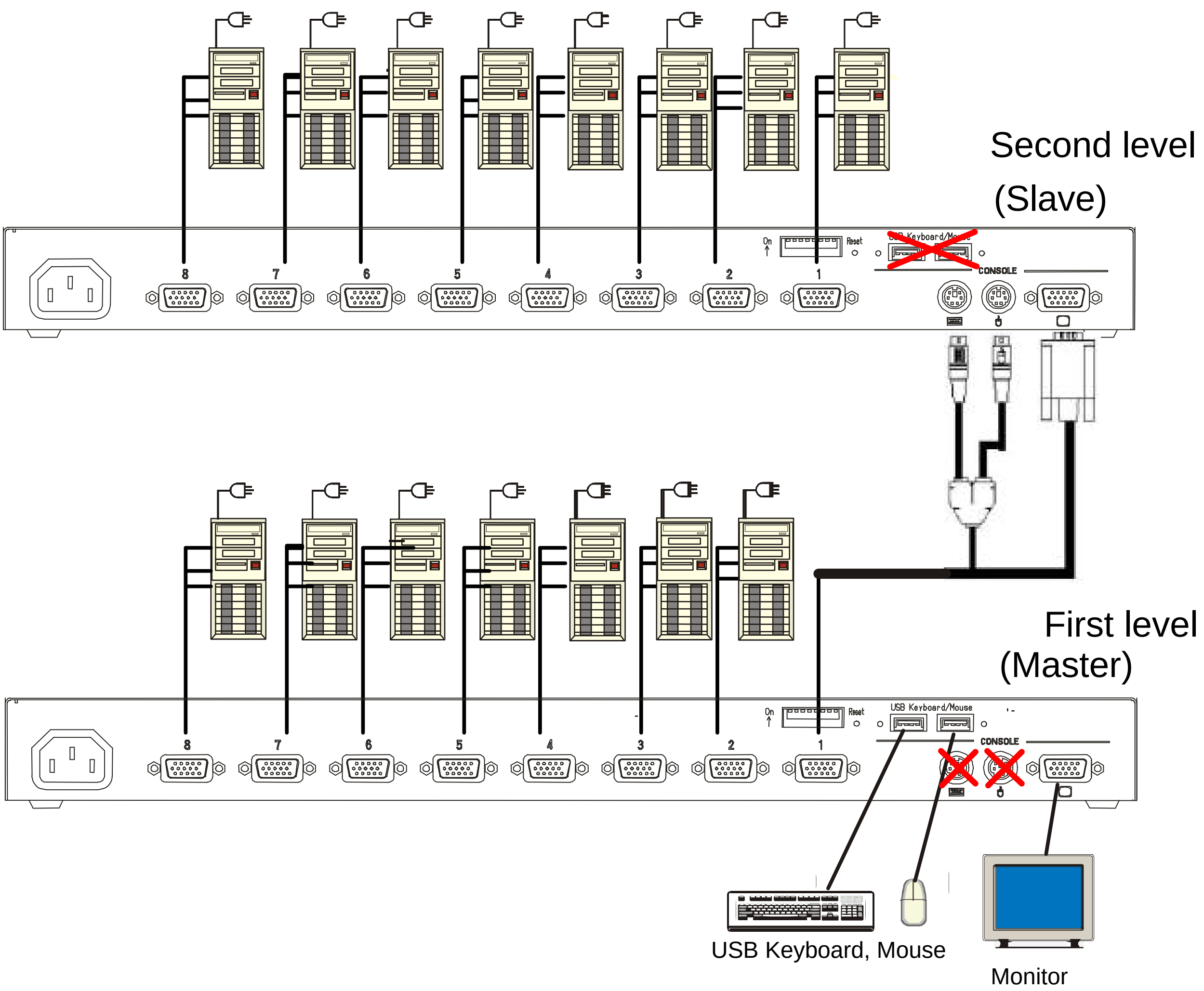
Monitor

⚠ CAUTION	This switch device and the hosts should use a three-line type power cable, with the ground line on the power cable grounded. If you use a two-line plug adapter be sure to attach the ground wire to a grounded object.

3) After each host and switch device have been connected, connect the keyboard, mouse, and monitor to the [CONSOLE] connectors on the switch device.
4) Attach switch device's AC power cable and then plug it into an electric outlet.
5) After confirming that the connections have been made correctly, start up the attached hosts.
6) Acquire Plug-n-Play data for the monitor.
 When a monitor is first attached to the switch device, its Plug-n-Play data (EDID data) needs to be acquired by the switch device. Re-start the host to be able to use the monitor with the acquired environment.
 [Plug-n-Play data setting]
 After connect the monitor to the switch device, push reset_sw or open the OSD via the hot key press, then go to EDID setting mode (using NEXT PAGE), and press the Enter key.
7) Select each port in turn and confirm the attached host is started up and using the correct settings.
8) If the keyboard, mouse, or monitor is not set correctly, adjust the settings and restart the system.

5.3.Connecting the hosts (using cascaded connections)

1) Connect the hosts one through eight to the second level of switch devices (called slaves), in the same way as for the [first level].
2) Next, use the special cables to attach the host port connector of the first level switch device (called master) to the [PS/2 keyboard], [PS/2 mouse], and [monitor] connectors on the console ports of the second level slave switch devices.
3) To increase the number of slaves, connect them in the same way as described in steps 1 and 2 above. Do not connect slaves beyond the second level. Three level connection does not work.



4) After each host and switching device have been connected, connect the keyboard, mouse, and monitor to the [CONSOLE] connectors on the (master) switch device.
5) Attach switch device's AC power cable and then plug it into an electric outlet.
6) After confirming that the connections have been made correctly, start up the attached hosts.
7) Acquire Plug-n-Play data for the monitor.
   When a monitor is first attached to the master switch device, its Plug-n-Play data (EDID data) needs to be acquired by the switch device. Re-start the host to be able to use the monitor with the acquired environment.
   [Plug-n-Play data setting]
   After connect the monitor to the switch device, push reset_sw or open the OSD via the hot key press, then go to EDID setting mode (using NEXT PAGE), and press the Enter key.
8) Select each port in turn and confirm the attached host is started up and using the correct settings.
9) If the keyboard, mouse, or monitor are not set correctly, adjust the settings and restart the system.

⚠ CAUTION

This switch device and the hosts should use a three-line type power cable, with the ground line on the power cable grounded.
If you use a two-line plug adapter be sure to attach the ground wire to a grounded object.
Only PS/2 cable is using to cascade connections.
Don’t connect USB devices to slave switch device. (Cascade connection will be lost when slave switch device has USB devices)

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6. Operation (Host selection)

At the beginning, first powered up host is selected automatically. And if some hosts powered up at the same time, a host which connected lower port No. is selected.

Also, when the power to a host is turned off while it is selected, the status is preserved. In that case, switch to the host you want to select with the selector buttons or the Hot Keys.

In normal operation, there are two methods for selecting a host, the Host Selector Buttons and the OSD display (Hot Key Mode).

6.1. Host selection by Host Selector Buttons (Normal mode)

Press the selector button of the host you want to select to switch the console to that host (the associated SELECT LED lights up).

*Note: Do not press two selector buttons at the same time, doing so may cause an operation error.

Press the Auto Scan Button, the SELECT LEDs flash slowly, and after a set time (default value is 10 seconds) the screen switches automatically. To change the switching interval, press the <?> cursor key to make it incrementally faster and the <?> cursor key to make it incrementally slower. The available switching intervals are 3/5/10 (default)/20/40/60 seconds. Hosts that are turned off are skipped. You cannot perform keyboard operations or use the mouse during auto scan. Exit Auto Scan Mode if you want to move to the Hot Key Mode.

Exit auto scan with the following method.

Auto Scan Button, or Enter Key: Switches to the currently displayed screen.

ESC Key: Returns you to the host where Auto scan started.

6.2. Host Selection by Keyboard (Hot Key Mode)

The Hot Key Mode may be activated using any of the following three methods:

"Hot key mode A":

Press Ctrl, Alt, Shift together. (Once)

Press Scroll Lock twice (Press the Scroll Lock key quickly in succession)

"Hot key mode B":

Press Ctrl twice (Press the Ctrl key quickly in succession)

When the Hot Key Mode is activated, the OSD (On Screen Display) selection screen is shown on the monitor. You can select hosts while looking at the OSD display.

The SELECT LED on the first level (master) switch device changes from being lit to flashing quickly regardless of single use or cascade connection. The Select LEDs of any slave switch devices remain lit as normal and do not blink.

And also, the Scroll lock LED on console keyboard starts blinking, and other LEDs are turned off.

*When there is no video (H/V Sync) signal from the currently connected host (suspended state), the OSD menu can be displayed by the video (H/V Sync) signals from other ports. At this time, the OSD menu flashes at 5-second intervals.

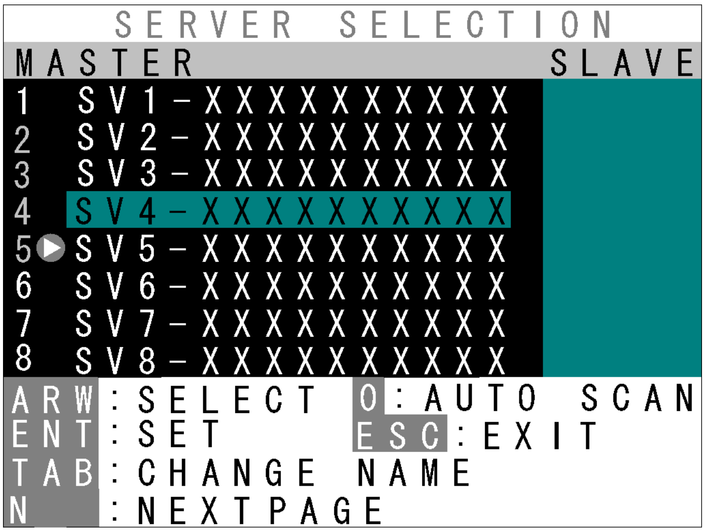
When the video signal (H/V Sync) is input to the currently selected port, status returns to normal.

*H Sync: Horizontal sync signal

*V Sync: Vertical sync signal

6.2.1. Hot Key Mode A

Press Ctrl, Alt, Shift once or press the Scroll Lock key twice to go into the Hot Key Mode and the following OSD screen is displayed.



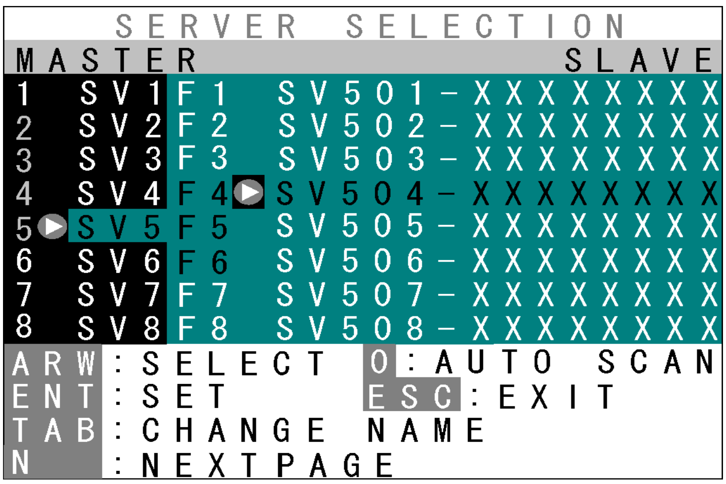
Example OSD Screen (probably different to actual screen)

a) Screen Details

1.) Center-left of screen (black background) shows the state of the (master) switch device ports.
2.) Center-right of screen (blue background) shows the state of any slave switch device cascade connected to the current channel.
3.) Purple text shows the hosts currently selectable with the arrow (cursor) keys.
4.) The bottom of the screen shows simple explanations of allowed key operations.
5.) The ▶ mark shows the currently selected host (channel).
6.) Green numbers (1~8 or F1~F8) show the connected host is ON.
7.) Depending on whether the selected channel has a cascaded slave device attached to it or not, the OSD master device display section (1. above) changes as follows:

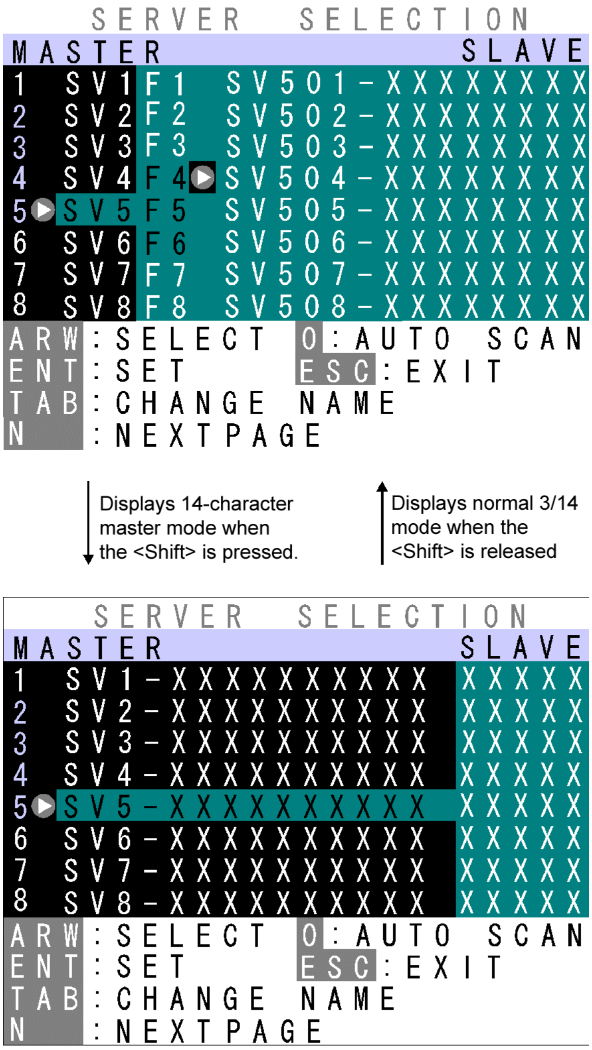
? Non-cascaded channel: 14-character wide master device section / nothing in slave section. (The OSD screen is the same without cascade connection.)

? Cascaded channel: 3-character wide master device section / 14-character wide slave section.

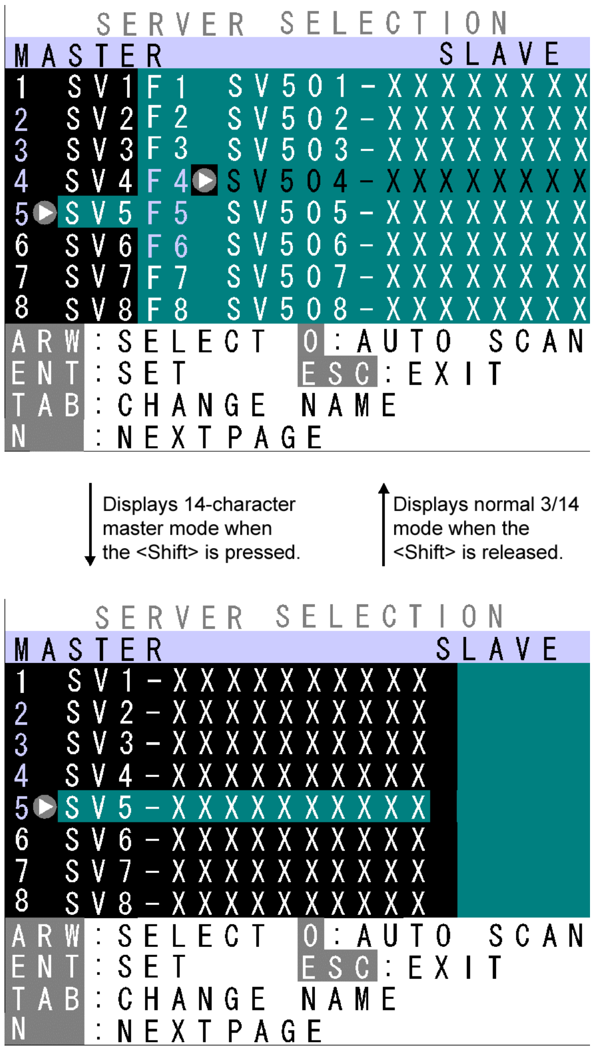


Example OSD Screen with cascaded channel selected

8.) If a cascade-connected master channel or any slave channel is selected, while the <Shift> key is pressed the OSD screen switches from “3-character master/14-character slave” mode back to “14-character master/5-character slave” mode. The OSD reverts to normal 3/14 mode when the <Shift> is released.



Cascade-connected master channel selected



Slave channel selected

b) Host Switching

No normal keyboard or mouse input is accepted while the hot key mode.

[Switching Via Keyboard]

1). Use the <?> & <?> cursor keys to select a host (channel) on the left side of the OSD.

2). If a cascade-connected channel is selected, the state of the selected slave device is shown on the right side of the OSD.

3). If a cascade-connected channel is selected, pressing the <? > cursor key causes control to switch to the right (slave) side of the OSD, with the currently selected cascaded host shown in purple. Press the <? > cursor key to return control to the left (master) side of the OSD.

4). On the right side of the OSD, use the <?> & <?> cursor keys as before to select a cascaded host (channel).

5). Press the <Enter> key to actually effect the console switch to the selected host. The name of the host switched to is shown at the top-left of the screen for about 3 seconds after the switch is effected.

Press the <Esc> key to escape the Hot Key Mode without switching the console.

[Switching Via Mouse]

The mouse may also be used to control the OSD (instead of the keyboard):

1). Scroll the mouse up & down to select a host (channel) on the left side of the OSD.

2). If a cascade-connected channel is selected, the state of the selected slave device is shown on the right side of the OSD.

3). If a cascade-connected channel is selected, pressing the right mouse key causes control to switch to the right (slave) side of the OSD, with the currently selected cascaded host shown in purple. Press the left mouse key to return control to the left (master) side of the OSD.

4). On the right side of the OSD, scroll the mouse up & down as before to select a cascaded host (channel).

5) Press the center mouse key to actually effect the console switch to the selected host. The name of the host switched to is shown at the top-left of the screen for about 3 seconds after the switch is effected.

[Direct Switching Via Keyboard]

4/8-port KVM switch (for the 4-port device, read “8” as “4”):

Use the number keys <1>~<8>.

For a cascaded setup, first use the number keys <1>~<8> to select a master-side channel, then use the function keys <F1>~<F8> to select a slave-side port.

Switching occurs immediately after the appropriate keys are pressed, and the OSD reverts to the normal console (Hot Key Mode is finished).

Point When selecting a port in a cascaded connection, select the port on the master side firstly. Then, select and switch to the port on the slave side.

[Direct Switching Via Host Selector Buttons]

Press the Selector Button “1”~”8” on the switch device’s console panel to select a host.

To select a cascaded host, press the Selector Button “1”~”8” on the slave KVM device’s console panel.

Switching occurs immediately after the selector button is pressed, and the OSD reverts to the normal console (Hot Key Mode is finished).

[Auto Scan Mode]

Pressing the keyboard’s <0> key, starts the console screen switching each time the “Auto Scan Interval” elapses, with the Select LEDs to switch to a slow blink.

The switching interval (Auto Scan Interval) may be adjusted by pressing the <?> cursor key to make it faster (shorter) and the <?> cursor key to make it slower (longer).

Allowed Auto Scan Intervals are: 3, 5, 10 (default), 20, 40 and 60 seconds

The new Auto Scan Interval is shown on the OSD for 3 seconds.

Hosts that are powered OFF are skipped. No normal keyboard or mouse input is accepted while the Auto Scan Mode is running.

To return to Hot Key Mode, the Auto Scan Mode must first be cancelled.

Auto Scan Mode may be cancelled as follows:

<Enter> key: Console switches to the currently displayed screen (host).

<Esc> key: Console reverts to the host active before Auto Scan Mode was entered.

C) Setting/Changing Host Names

1). Select the host name to be set/changed using the cursor keys, exactly as if switching.

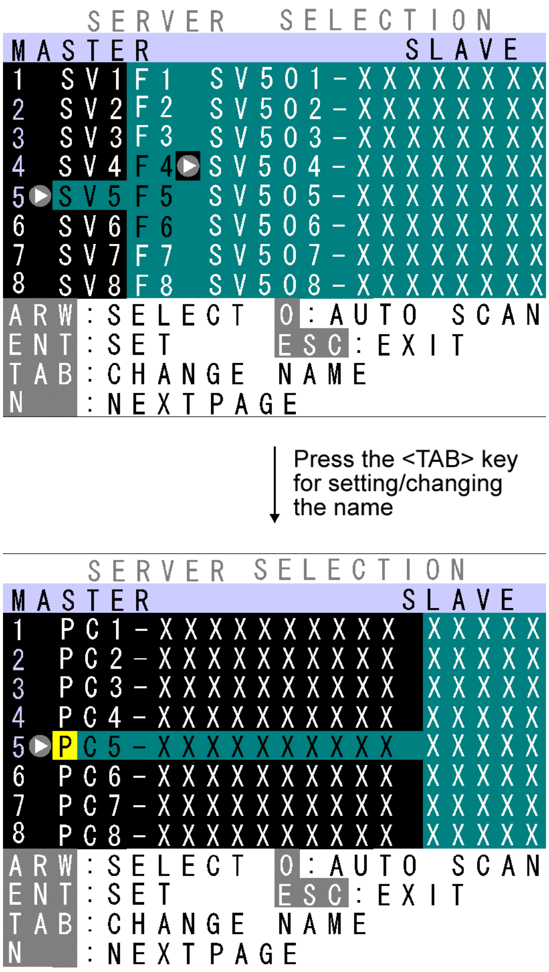
2). Press the <Tab> key.

3). The selected name turns yellow, with a single black on yellow character.

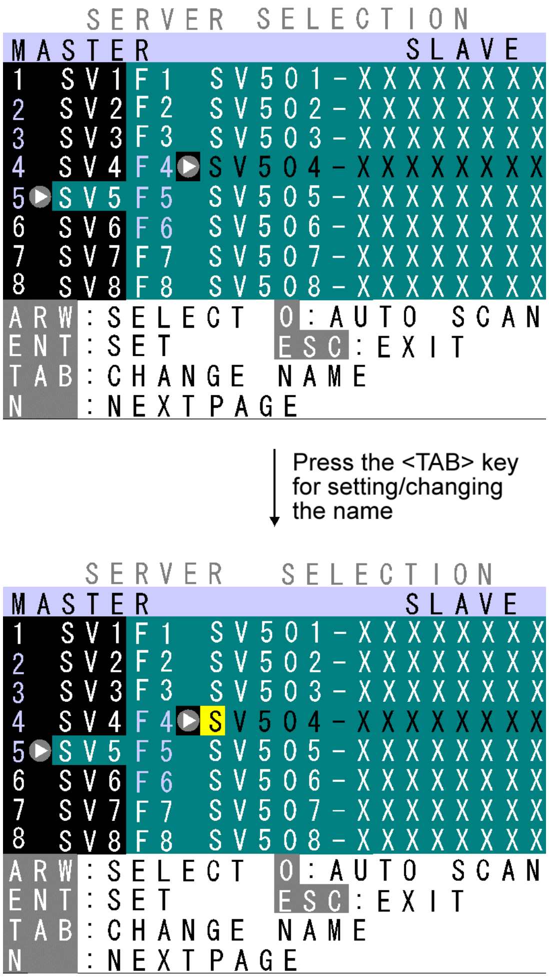
4). Use the keyboard to enter the desired name, then press the <Enter> key to confirm it.
Use the <Del> key to delete a single character, and the <BS> key to backspace.
Use the <Esc> key to cancel an unconfirmed name (revert to original name).

5). A host name may be up to 14-characters long.

6). Any of the following 47 characters may be used:
ABCDEFGHIJKLMNOPQRSTUVWXYZ1234567890,./[]:+*-+ and <Space>



Changing a master-side name
(Single KVM setup has no blue area)



Changing a slave-side name

7). Pressing the Reset Switch with the <1> and <3> front switches also held down causes any set names to be discarded and reverts the device to the factory defaults. This will occur even if the device is in normal Console Mode (not Hot Key Mode).
Note that if the device is reset in this way, any names that were set are lost, and not recoverable.

6.2.2. Hot Key Mode B

Press the <Ctrl> key twice to go into the Hot Key Mode and the following OSD screen appear in the upper-left of the screen.

a) Screen Details

1). Selected host name is shown in the OSD in the upper left of the screen.
2). Before switching the text background turns in red.
3). After switching the text background turns in blue, and the Hot Key Mode is exited after the switch is completed.
4). The OSD disappears about 3 seconds later.

b) Host Switching

When the text background turns in red, the desired host may be switched to by pressing the matching number key(s):

4/8-port KVM switch (for the 4-port device, read "8" as "4"):
Use the number keys <1>~<8>.
For a cascaded setup, first use the number keys <1>~<8> to select a master-side channel, then use the function keys <F1>~<F8> to select a slave-side port.
Switching occurs immediately after the appropriate keys are pressed, and the OSD reverts to the normal console (Hot Key Mode is finished).

No normal keyboard or mouse input is accepted while the text background is in red.
To change the text background back to blue (exit Hot Key Mode), either press a number key (combination), or press the <Esc> key, or the <Enter> key.
If the <0> key is pressed while the text background is red, Auto Scan Mode is entered.
Auto Scan Mode may be cancelled as follows:
<Enter> key: Console switches to the currently displayed screen (host).
<Esc> key: Console reverts to the host active before Auto Scan Mode was entered.

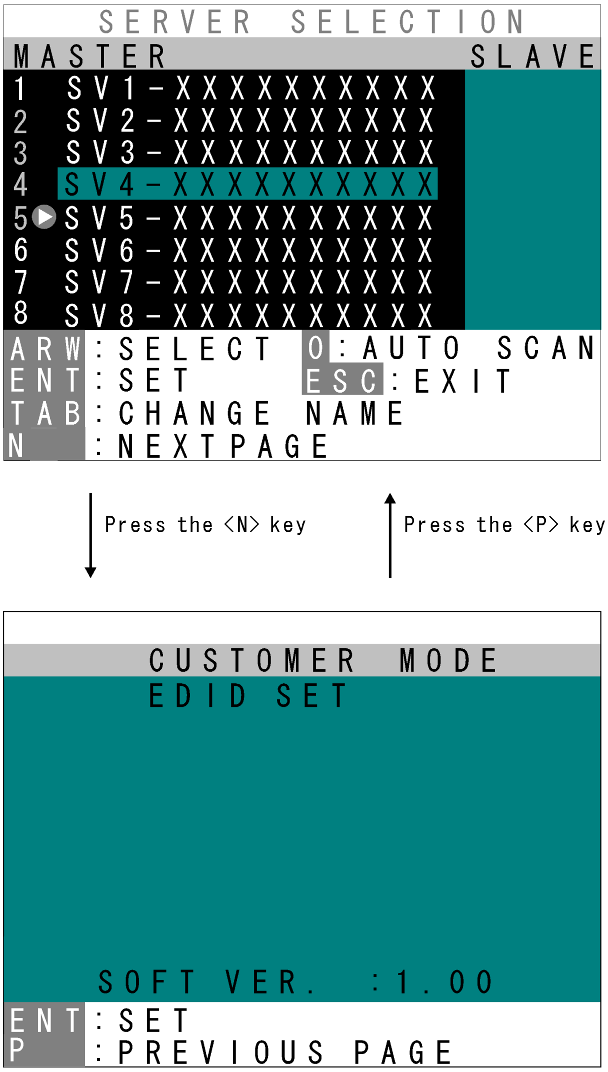
6.3. Showing/Hiding Host Names Function

[Showing/Hiding Host Name Function]
When the device is operating in normal Console Mode, holding the <Shift> key down and pressing the <Scroll Lock> key twice make the host name for the currently selected channel to be shown in the top-left of the screen. (Showing Host Names)
If the host name is being displayed, holding the <Shift> key down and pressing the <Scroll Lock> key twice again changes the host name to disappear from the screen. (Hiding Host Names)

The factory default is hiding the host names.
The showing host name is not appeared when Hot Key Mode, Auto scan mode is active.
While in the Hot Key Mode, holding the <Shift> key down and pressing the <Scroll Lock> key twice will not change the host name to be shown/hidden.
The current Show/Hide Host Name state is retained after switching the host via selector buttons or OSD.

6.4. EDID Setting Mode

After pressing the <Ctrl>+<Alt>+<Shift> keys or double pressing the <Scroll Lock> to activate the Hot Key Mode A, pressing the <N> key changes the display to switch to the Customer Mode:



The top line accesses the EDID Setting Mode.
The bottom line displays the firmware version currently installed.

Pressing the <Enter> key on this screen causes the text background to turn purple, while the EDID information is retrieved from the monitor connected to the console port and written to the internal ROM.
After the ROM has been written, the message “PNP MONITOR” is displayed.
When EDID information cannot be retrieved from the connected monitor, the message “DEFAULT MONITOR” is displayed, and “00” is written to the ROM.
If a new monitor is connected, and the EDID Setting performed, the internal ROM setting is subsequently transmitted to each host automatically.

The EDID Setting Mode may be ended as follows:
Press the <P> key to return to the Host Selection screen (Hot key mode A).
Press the <Esc> key to escape the Hot Key Mode and return to the normal console screen.

CAUTION

We recommend a noninterlaced video signal for the on screen display.

(However, it is possible to display an interlaced signal with a resolution of 1152 x 864, 1280 x 1024, or 1600 x 1200. However at resolutions lower than this and the display may extend beyond the edges of the screen.

Point

When push the Reset Switch, EDID setting is also done automatically.

7. Specifications

Item		Specification	
Product ID (Model)		FS-1004MU (KVM switch)	FS-1008MU (KVM Switch)
Number of Connected Host Devices		Max. 4 (more if connections are cascaded)	Max. 8 (more if connections are cascaded)
Selection Method		Host Selector Buttons, OSD Display (Hot Key Mode)	
LED Display	POWER (Green)	4	8
	SELECT (Green)	4	8
Host Interfaces	PS/2 Keyboard	PS/2 Keyboard Interface compliant	
	PS/2 Mouse	PS/2 Mouse Interface compliant	
	USB Keyboard & Mouse	USB 1.1 compliant USB HID device, keyboard & mouse composite device	
	Sun Serial Keyboard & Mouse	SUN Keyboard/Mouse compliant	
Host Ports		Mini D-SUB 15P Female x 4 (Black)	Mini D-SUB 15P Female x 8 (Black)
Console Ports	PS/2 Keyboard	PS/2, Mini DIN 6P Female x 1 (Purple)	
	PS/2 Mouse	PS/2, Mini DIN 6P Female x 1 (Green)	
	USB Keyboard & Mouse	USB type A X 2	
	Monitor	Mini D-SUB 15P Female x 1 (Blue)	
OSD Modes		Manual (Hot Key) Mode / Auto Scan Mode	
Auto Scan Intervals		3 / 5 / 10 (default) / 20 / 40 / 60 seconds	
Monitor Resolution Refresh Rate		1600 x 1200 (Max.) 75Hz	
Monitor Plug & Play Function		VESA DDC2 Compatible	
Voltage		DC5V	AC100V to AC240V 50/60Hz
Current		0.6A (DC)	0.2A (AC100V) 0.1A (AC240V)
Supply Current to Keyboard/Mouse		PS/2 port 300mA (typ.) , USB port 250mA (typ.)	
Operating Environment		0~40ºC / 10~80%RH (avoid condensation)	
Storage Environment		-20~60ºC (avoid condensation)	
Construction		Painted (Black) Metal Case	
Size (W x D x H)		195 x 104 x 40 mm	437 x 210 x 42 mm
Weight		0.8kg	3.0kg
Included Accessories		User's Manual (x 1) AC Adapter (x 1)	User's Manual (x 1) 19-inch Rackmount Holder (Large x1+Small x 1 + Fastening Screws)

8. Optional Accessories (Sold separately)

- **KVM Special Cables**

Item	Product ID	Remark
Combined Keyboard + Mouse + Monitor Cable (1.8m)	NC14000-B602 NC14000-B102 NC14000-B202	PS/2 cable (this cable may be used for cascade connections) USB cable Sun cable
Combined Keyboard + Mouse + Monitor Cable (3.0m)	NC14000-B603 NC14000-B103 NC14000-B203	PS/2 cable USB cable Sun cable
Combined Keyboard + Mouse + Monitor Cable (5.0m)	NC14000-B605 NC14000-B105 NC14000-B205	PS/2 cable USB cable Sun cable

- **AC Cables**

Item	Product ID	Remark
For USA	NC14004-B074 NC14004-B077	8Port KVM 4Port KVM (AC Adapter)
For EUROPE	NC14004-B075 NC14004-B078	8Port KVM 4Port KVM (AC Adapter)
For UK	NC14004-B076 NC14004-B079	8Port KVM 4Port KVM (AC Adapter)

- **Misc.**

Item	Product ID	Remark
Rackmount Panel	NC14003-T038	For 4 port KVM
Sun CRT cable adapter	NC14003-T042/ADP	13 W 3(M) <-> DB 15 HD

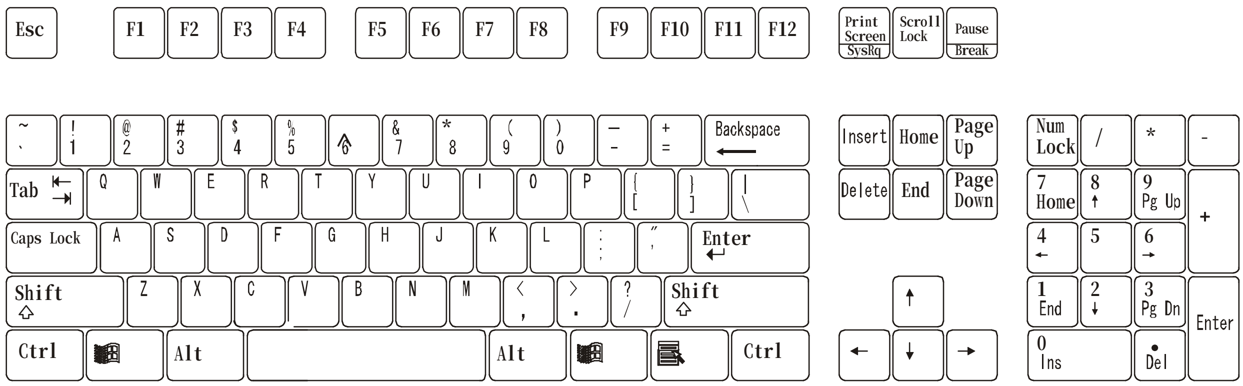
9. Troubleshooting

Symptom	Cause	Action
The POWER LED is flashing.	The AC cord is not connected to the electric outlet or to the switch device.	Connect the AC cord.
	The AC power is off.	Turn on the AC power.
	The internal power fuse has blown.	Contact the place of purchase or the support center.
The keyboard and mouse do not operate or operate strangely. (Special programmable, cordless or mice with wheels)	The keyboard and mouse connections on the host are reversed.	Match the port Nos.
	Cannot get out of Hot Key Mode	Press the [Enter] or [ESC] key
	The key repeat is abnormal.	Change the speed setting for the key repeat on the host.
	Connection/cable is defective	Confirm the connector connection. Replace with a different cable. If this solves the problem, replace with a new cable.
	A non-supported keyboard or mouse is connected.	Replace with a supported keyboard or mouse.
The scroll function or button does not operate.	Mouse not supported	Replace with a supported mouse.
	The specific mouse driver is not installed.	Install the specific mouse driver.
Poor screen quality (Faded images, blurred characters, etc.)	Connection/cable is defective	Confirm the connector connection. Replace with a different cable. If this solves the problem, replace with a new cable.
Window shifts or does not display when switching	Wrong resolution	Adjust the resolution or use the monitor function.
	Unsupported monitor, or cannot synchronize	Replace with a supported monitor (multisync). Use the monitor function.
Cannot go into Auto Scan Mode	Device enters Hot Key Mode	The device goes into Hot Key Mode, press the number key (0).
	Wrong key	Press the number key (0).
Cannot go into Hot Key Mode	Wrong key	First level are the number keys (1 through 8). Second level are F1 through F8.
The auto scan switch cycle is abnormal.	The switch cycle has not been adjusted. (The default value is 10 seconds.)	Use the cursor keys (? and ?) to adjust it.
Operation stops after a period of normal operation.	Connection has been disrupted.	Check the connections and the restart.
	The switcher is hung up.	Press the reset switch.
	A problem has occurred at the host.	Correct the problem at the host.
The LED on the device does not light even after turning on the host.	The host's keyboard/mouse port's power circuit protection element has failed.	Correct the problem at the host.
Cascaded connections are not recognized.	A problem has occurred at the switcher.	Press the reset switch. (Both the slave and the master)

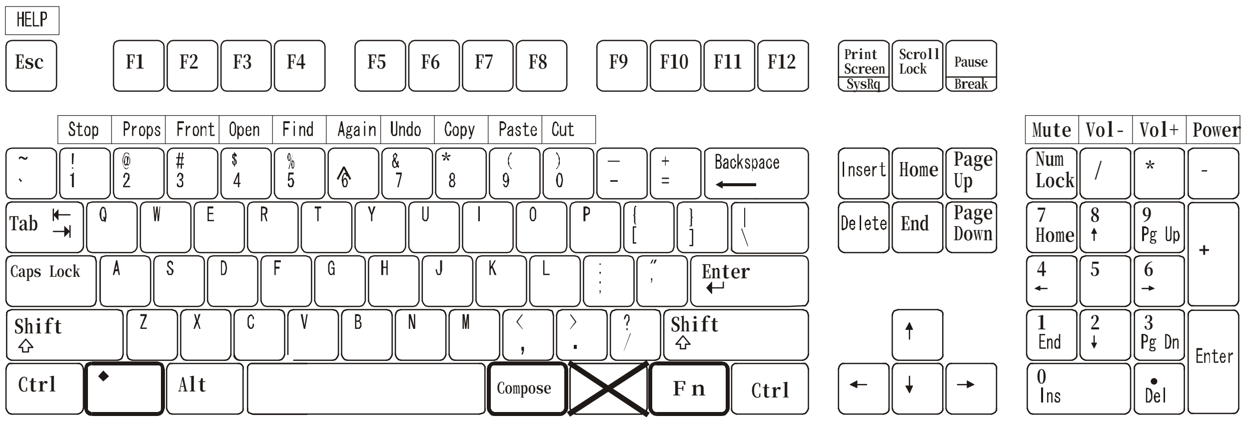
■ Key layout diagram 1

(ASCII keyboard for PC/AT compatible machines)

(1) When connecting to a PC/AT compatible machine



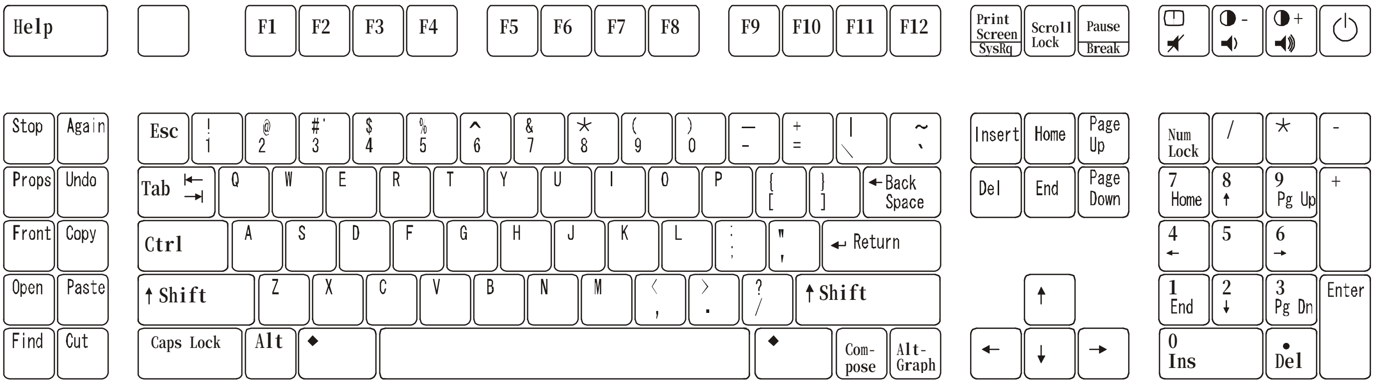
(2) When connecting to a Sun workstation



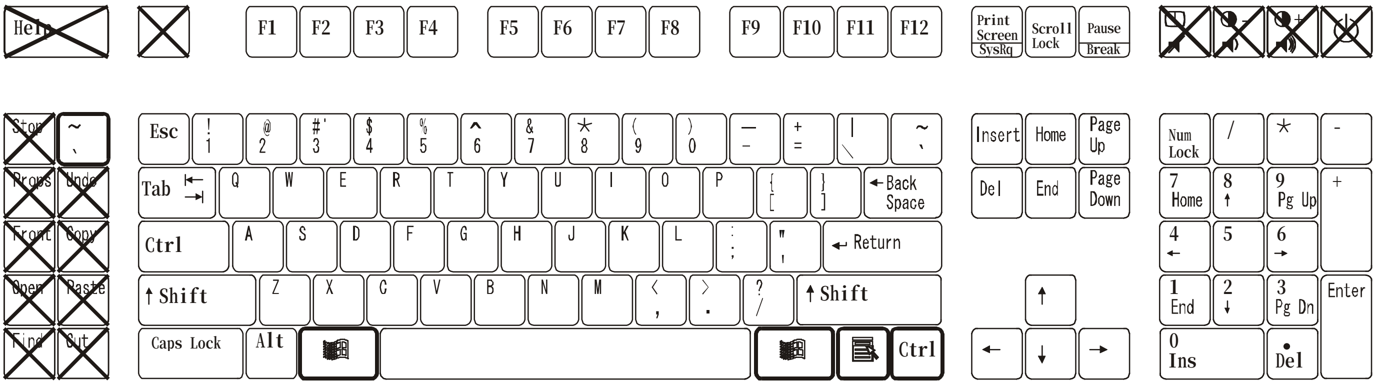
■ Key layout diagram 2

(ASCII keyboard for Sun)

(1) When connecting to a Sun workstation



(2) When connecting to a PC/AT compatible machine



■ Appendix: Host name record sheets

Record a list of the names of the hosts that attached to your switch device.

Master Unit	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.2	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.4	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.1	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.3	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.5	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.6	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.7	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Slave Unit Port.8	
NO.	NAME
1	
2	
3	
4	
5	
6	
7	
8	

Declaration of Conformity	
Model Number	: FS-1004MU, FS-1008MU
Trade Name	: KVM Switch
Responsible party	: FUJITSU COMPONENT AMERICA, INC.
Address	: 250 East Caribbean Drive, Sunnyvale,CA94089
Telephone number	: (408) 745-4900

This device complies with Part 15 of the FCC Rules. Operation Is subject to the following two conditions : (1) this device may not cause harmful Interference, and (2) this device must accept any Interference received, Including Interference that may cause undesired operation. DOC Class B

KVM Switch [FS-1004MU / FS-1008MU Series]

User's Manual

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